

**Texas State Soil and Water Conservation Board
State Nonpoint Source Grant Program
Project 21-55**

SUMMARY PAGE			
Title of Project	Little Brazos River Tributaries Assessment and Planning Monitoring Support		
Project Goals	<ul style="list-style-type: none"> • Provide quality assured water quality monitoring data collection • Deliver data to TCEQ for inclusion in the Texas Surface Water Quality Monitoring Information System • Recent water quality described in final project report 		
Project Tasks	(1) Project Administration; (2) Quality Assurance; (3) Water Quality Data Collection and Processing		
Measures of Success	<ul style="list-style-type: none"> • Data of known and acceptable quality generated and delivered to the state for use in future water body assessments • Recent water quality status discovered and described in a final report 		
Project Type	Implementation (); Education (); Planning (); Assessment (X); Groundwater ()		
Status of Waterbody on 2020 Texas Integrated Report	<u>Segment ID</u> 1242I – Campbells Creek 1242K – Mud Creek 1242L – Pin Oak Creek 1242M – Spring Creek 1242O – Walnut Creek	<u>Parameter of Impairment or Concern</u> <i>E. coli</i> /dissolved oxygen <i>E. coli</i> <i>E. coli</i> <i>E. coli</i> /dissolved oxygen <i>E. coli</i>	<u>Category</u> 5c/CN & CS 5b 5b 5b/CS 5b
Project Location (Statewide or Watershed and County)	Robertson County, Texas		
Key Project Activities	Hire Staff (); Surface Water Quality Monitoring (X); Technical Assistance (); Education (); Implementation (); BMP Effectiveness Monitoring (); Demonstration (); Planning (); Modeling (); Bacterial Source Tracking (); Other ()		
2017 Texas NPS Management Program Reference	<ul style="list-style-type: none"> • Component 1: LTG 1, 2 • Component 1: STG 1A, 1B • Component 3, 5, 7 		
Project Costs	\$112,416		
Project Management	Texas A&M AgriLife Research, Texas Water Resources Institute		
Project Period	May 1, 2021 – April 30, 2023		

Part I – Applicant Information

Applicant							
Project Lead		Dr. Lucas Gregory					
Title		Assistant Director					
Organization		Texas A&M AgriLife Research, Texas Water Resources Institute					
E-mail Address		LFGregory@ag.tamu.edu					
Street Address		578 John Kimbrough Blvd; 2260 TAMU					
City	College Station	County	Brazos	State	TX	Zip Code	77843-2260
Telephone Number		979-845-1851		Fax Number		979-845-0661	

Project Partners	
Names	Roles & Responsibilities
Texas State Soil and Water Conservation Board (TSSWCB)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TCEQ.
Texas A&M AgriLife Research, Texas Water Resources Institute (TWRI)	Provide project oversight and reporting, QA/QC, conduct water sample collection, data submittals, and final report development.

Part II – Project Information

Project Type					
Surface Water	X	Groundwater			
Does the project implement recommendations made in: (a) a completed WPP; (b) an adopted TMDL; (c) an approved I-Plan; (d) a Comprehensive Conservation and Management Plan developed under CWA §320; (e) the <i>Texas Coastal NPS Pollution Control Program</i> ; or (f) the <i>Texas Groundwater Protection Strategy</i> ?				Yes	No
If yes, identify the document.				N/A	
If yes, identify the agency/group that developed and/or approved the document.			N/A	Year Developed	N/A

Watershed Information				
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	Category on 2020 IR	Size (Acres)
Campbells Creek 1242I	120701010609	1242I	5c	14,897
Mud Creek 1242K	120701010602	1242K	5b	39,425
Pin Oak Creek 1242L	120701010604	1242L	5b	25,953
Spring Creek 1242M	120701010608	1242M	5b	23,208
Walnut Creek 1242O	120701010501, ...02, and ...03	1242O	5b	87,519

Water Quality Impairment
Describe all known causes (i.e., pollutants of concern) and sources (e.g., agricultural, silvicultural) of water quality impairments or concerns from any of the following sources: <i>2020 Texas Integrated Report</i> , Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.
<p>2020 Texas Integrated Report: Potential Sources of Impairments and Concerns</p> <p>Campbells Creek 1242I – bacteria impairment – NPS natural conditions, NPS, NPS CAFOs</p> <p>Mud Creek 1242K – bacteria impairment – NPS, NPS CAFOs</p> <p>Pin Oak Creek 1242L – bacteria impairment – NPS, NPS CAFOs</p> <p>Spring Creek 1242M – bacteria impairment – NPS, NPS CAFOs</p> <p>Walnut Creek 1242O – bacteria impairment – NPS, NPS CAFOs</p> <p>2017 BRA Clean Rivers Program Basin Summary Report</p> <p>Sources of elevated bacteria levels prevalent through much of the watershed have not been determined. Creeks are small, rural tributaries with low to intermittent flow that are dominated by stormwater runoff.</p> <p>Recreational Use Attainability Analysis Report: 2014</p> <p>Summarized information from the “Recreational Use Attainability Analysis of Five Creeks along the Little Brazos River” report developed by the Brazos River Authority indicates the following potential sources of pollution:</p> <p><u>Permitted Wastewater:</u> Campbells, Mud, Walnut Creeks</p> <p><u>Non-permitted Agricultural:</u> grazing livestock – all watersheds; non-permitted poultry(broilers) – Campbells, Mud, Walnut Creeks</p> <p><u>On-site Sewage Systems:</u> estimated at approximately 1,000 systems across the five watersheds, higher density in Campbells Creek near the City of Bryan</p> <p><u>Wildlife and Feral Hogs:</u> all watersheds</p>

Project Narrative

Problem/Need Statement

A number of small creeks in the Brazos River basin are considered as impaired due to elevated *E. coli* concentrations but are not currently monitored. The Little Brazos River is the receiving water of five such creeks in Robertson County: Campbells Creek (1242I), Mud Creek (1242K), Pin Oak Creek (1242L), Spring Creek (1242M), and Walnut Creek (1242O). These creeks were first listed as impaired in the *2002 Texas Integrated Report* except for Walnut Creek, which was designated impaired in 2006. Routine water quality monitoring has not been conducted on these creeks since 2010 and these waterbodies remain categorized as impaired despite this lack of recent data. This data was used in the *2014 Texas Integrated Report*. *E. coli* geometric means for these creeks ranged from 609 to 1,877 cfu/100 mL; well above the applicable water quality standard of 126 cfu/100 mL in place at the time. In the most recent assessment, the *2020 Texas Integrated Report*, no data were available for evaluation due to the amount of time elapsed since this data was collected, yet the stream remain impaired due to their prior impaired status.

In the 2018 Texas Surface Water Quality Standards, the Texas Commission on Environmental Quality recommended water quality standard changes for these five creeks to a secondary contact recreation 1 standard of 630 cfu/100 mL. This recommendation was made based upon the results of recreational use attainability analyses (RUAA) conducted by the Brazos River Authority (BRA) under TSSWCB Project (08-54). U.S. EPA has approved the standards change for Campbells Creek (1242I) and the State of Texas continues to await decisions on the other four creeks. Regardless, these creeks remain impaired due to lack of recent data that also precludes their ability to be delisted, even if water quality standard change recommendations are approved.

Future action to address these water quality impairments will likely be necessary. The RUAA conducted by BRA was an initial step in the process to appropriately address these water quality impairments; however, old data suggest that these creeks would remain impaired if secondary contact 1 standards (630 cfu/100 mL) are applied. Further, the lack of data collection in the last 10 years will prevent assessments from occurring in the future guaranteeing that these waterbodies will remain impaired for the foreseeable future. Should the waterbodies remain impaired, remedial action such as development of total maximum daily loads or a watershed protection plan will be necessary. Each of these actions require a reasonable amount of water quality and quantity data to assess current conditions and estimate pollutant loading reductions necessary to meet applicable water quality standards. Currently, this data does not exist, and planning is not possible at this time.

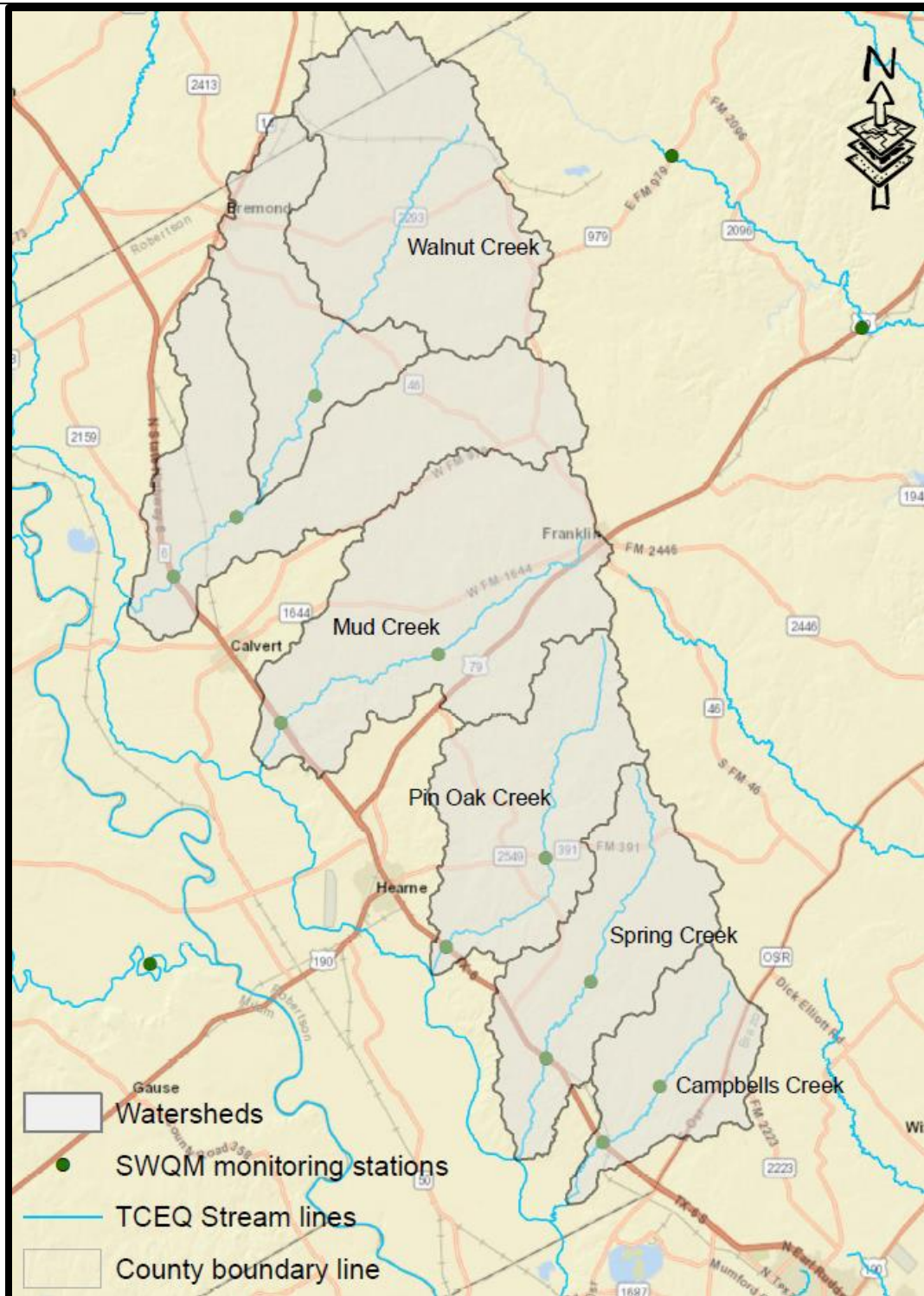
Water quality and quantity data collection is needed to fill this data gap and provide data necessary to demonstrate whether *E. coli* concentrations meet applicable water quality standards or not. Should data meet these standards, the creek(s) will be removed from the impaired waters list as appropriate. If data indicate that applicable standards are not being met, additional data collection will provide a basis for planning efforts to address pollutant loadings in these watersheds.

Project Narrative

General Project Description (Include Project Location Map)

Through this project, routine water quality monitoring will be reinstated in the five watersheds described with a focus on collecting paired flow rate and *E. coli* concentration data. Data will be collected at five sites (one per watershed) monthly for 21 months. Sampling site reconnaissance will be conducted on all existing TCEQ monitoring stations in the watersheds to determine the most appropriate site within each watershed to monitor. If no sites are found to be safely accessible or adequately representative of the streams, new station locations will be requested. All sampling procedures, methods, sampling sites, and planned project activity will be fully described in a project quality assurance project plan (QAPP). Sampling will not begin until the project QAPP is approved. Monthly sampling will include field parameters, streamflow measurement, and *E. coli* grab samples to allow data gaps to be filled thus enabling future water quality assessments and watershed analysis.

Water quality and quantity data will be uploaded to the TCEQ Surface Water Quality Monitoring Information System for future waterbody assessments. Findings will also be summarized in a project final report that provides an informational basis for any future work conducted in these watersheds.



Tasks, Objectives and Schedules			
Task 1	Project Administration		
Costs	\$17,987		
Objective	To effectively administer, coordinate, and monitor all work performed under this project including technical and financial supervision, and preparation of status reports.		
Subtask 1.1	TWRI will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 1 st of December, March, June and September. QPRs shall be distributed to all Project Partners.		
	Start Date	Month 01	Completion Date Month 24
Subtask 1.2	TWRI will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.		
	Start Date	Month 01	Completion Date Month 24
Subtask 1.3	TWRI will host coordination meetings or conference calls, at least quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. TWRI will develop lists of action items needed following each project coordination meeting and distribute to project personnel.		
	Start Date	Month 01	Completion Date Month 24
Subtask 1.4	TWRI will develop a Final Report that summarizes activities completed and conclusions reached during the project and discusses the extent to which project goals and measures of success have been achieved.		
	Start Date	Month 22	Completion Date Month 24
Deliverables	<ul style="list-style-type: none"> QPRs in electronic format Reimbursement Forms and necessary documentation in hard copy format Final Report in electronic and hard copy formats 		

Tasks, Objectives and Schedules			
Task 2	Quality Assurance		
Costs	\$6,745		
Objective	To develop data quality objectives (DQOs) and quality assurance/control (QA/QC) activities to ensure data of known and acceptable quality are generated through this project.		
Subtask 2.1	TWRI will develop a QAPP for activities in Task #3 consistent with the most recent versions of <i>EPA Requirements for Quality Assurance Project Plans (QA/R-5)</i> and the <i>TSSWCB Environmental Data Quality Management Plan</i> . All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the <i>TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)</i> and <i>Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416)</i> . [Consistency with Title 30, Chapter 25 of the Texas Administrative Code, <i>Environmental Testing Laboratory Accreditation and Certification</i> , which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) standards, shall be required where applicable.]		
	Start Date	Month 01	Completion Date Month 03
Subtask 2.2	TWRI will implement the approved QAPP. TWRI will submit revisions and necessary amendments to the QAPP as needed.		
	Start Date	Month 04	Completion Date Month 24
Deliverables	<ul style="list-style-type: none"> QAPP approved by TSSWCB in electronic format Approved revisions and amendments to QAPP, as needed Data of known and acceptable quality as reported through Task #3 		

Tasks, Objectives and Schedules			
Task 3	Surface Water Quality Monitoring		
Costs	\$87,684		
Objective	To collect water quality and quantity data of known and acceptable quality for future waterbody assessments.		
Subtask 3.1	Sampling site reconnaissance and selection – Conduct sampling site reconnaissance to determine the safest, most accessible sites for water quality monitoring in the project watersheds. One site will be selected per creek. Station location requests will be made if necessary.		
	Start Date	Month 01	Completion Date
Subtask 3.2	Water Quality Monitoring – Upon QAPP approval, TWRI will conduct monthly ambient water quality monitoring at five sites (one per creek) for 21 months (105 total samples). Sampling will include basic field parameters (temperature, pH, DO, conductivity, and flow where conditions allow) and grab sample collection (analyzed for <i>E. coli</i>). Water samples will be delivered to a NELAP accredited laboratory within the appropriate holding time for bacterial analysis.		
	Start Date	Month 04	Completion Date
Subtask 3.3	Water Quality Data Submission – TWRI will maintain a master database of collected water quality data. Data will be submitted to TCEQ for inclusion in SWQMIS on a quarterly basis.		
	Start Date	Month 09	Completion Date
Deliverables	<ul style="list-style-type: none"> Sampling site selection documented in QAPP and QPR Documentation of sampling events in QPRs SWQMIS data submissions (Data sets, Data Review Checklists) 		

Project Goals (Expand from Summary Page)

The goals of this project are threefold:

- Provide water quality and quantity data collection that meets TCEQ requirements for data to be included in the Surface Water Quality Monitoring Information System that is acceptable for use in future waterbody assessments
- Reinstate water quality and quantity data collection in the five project watersheds to generate a data set sufficient for the State of Texas to assess water quality relative to applicable water quality standards and to begin building a data set for future planning activity if deemed necessary
- Describe recent water quality findings and short-term temporal trends in final project report along with an assessment of whether water quality will meet designated standards and what appropriate next steps are for evaluated watersheds

Measures of Success (Expand from Summary Page)

The project will be considered successful upon completion of data collection, its delivery to TCEQ for inclusion in the Surface Water Quality Monitoring Information System, and delivery of a summary report describing data collection findings.

2017 Texas NPS Management Program Reference (Expand from Summary Page)

Components, Goals, and Objectives

Component 1: Explicit short- and long-term goals, objectives ... that protect surface and groundwater.

- LTG 1: Focus NPS abatement efforts, implementation strategies, and available resources in watersheds identified as impacted by nonpoint source pollution
- LTG 2: Support the implementation of state, regional and local programs to prevent NPS pollution through assessment...
- STG 1: Data Collection and Assessment: coordinate with appropriate federal, state, regional, and local entities...to target water quality assessment activities.... where additional information is needed
 - Objective A: Identify surface water bodies ... that need additional information to characterize non-attainment of designated uses and water quality standards
 - Objective B: ensure that monitoring procedures meet quality assurance requirements or TSSWCB Quality Management Plans

Component 3: Combination of statewide nonpoint source programs and on-the-ground projects achieve water quality benefits; efforts are well-integrated with other relevant state and federal programs.

Component 5: Identify waters and watersheds impaired by nonpoint source pollution...and establish a process to assign priority and progressively address identified waters by conducting more detailed watershed assessments...

Component 7: Manage and implement the NPS program efficiently and effectively, including necessary financial management.

Estimated Load Reductions Expected

Loading reductions are not anticipated to result from this project. Data collection will allow for future loading reduction needs to be identified should resulting water quality verify the current impaired water quality status.

Part III – Financial Information

Category	Costs
Personnel	\$ 65,463
Fringe Benefits	\$ 20,685
Travel	\$ 2,070
Equipment	\$ -
Supplies	\$ 180
Contractual	\$ -
Construction	\$ -
Other	\$ 9,355
Total Direct Costs	\$ 97,753
Indirect Costs ($\leq 15\%$)	\$ 14,663
Unrecovered IDC	
Total Project Costs	\$ 112,416

Budget Justification (Federal)		
Category	Total Amount	Justification
Personnel	\$ 65,463	<p>TWRI Asst. Director: \$95,448 annually @ 1 month (4.16% per year) – \$8,302</p> <p>TWRI TBD Program Manager: \$64,970 annually @ 2 months (8.33% per year) – \$10,986</p> <p>TWRI Research Assoc.: \$50,692 annually @ 4 months (16.67% per year) – \$17,669</p> <p>TWRI TBD Research Asst.: \$45,000 annually @ 3.9 months (16.25% average per year) – \$14,861</p> <p>TWRI TBD QAO: \$75,000 annually @ 0.96 months (4% average per year) - \$6,045</p> <p>TWRI Hourly Labor: \$19/hr at 5 hrs/mo. for 40 wks/yr. – \$7,600</p> <p>*named positions are budgeted with a 3% annual pay increase in all years; TBD positions and graduate students are budgeted with a 3% pay increase in years after year 1</p> <p>*Salary estimates are based on average monthly percent effort for the entire contract. Actual percent effort may vary more or less than estimated between months; but in aggregate, will not exceed total effort estimates for the entire project.</p> <p>*cell phone allowances for project calls/emails during & after business hours & travel are occasionally factored into salaries & fringe, but again, will not exceed overall dollar amount.</p>
Fringe Benefits	\$ 20,685	<p>Fringe for faculty and staff is calculated at 18.5% salary plus \$771 per month.</p> <p>Fringe for hourly students is calculated at 11% salary.</p> <p>*named positions are budgeted with a 3% annual pay increase in all years; TBD positions and graduate students are budgeted with a 3% pay increase in years after year 1</p> <p>*Salary estimates are based on average monthly percent effort for the entire contract. Actual percent effort may vary more or less than estimated between months; but in aggregate, will not exceed total effort estimates for the entire project.</p> <p>*cell phone allowances for project calls/emails during & after business hours & travel are occasionally factored into salaries & fringe, but again, will not exceed overall dollar amount.</p>
Travel	\$ 2,070	23 trips to watershed sampling sites for site reconnaissance, sampling, and site maintenance @ 90 mi. ea. and \$.50/mi.: 2 vehicles per trip (\$2,070)
Equipment	\$ 0	N/A
Supplies	\$ 180	Consumable Sampling Supplies & PPE, including, but not limited to: gloves, masks, sampling containers, etc.
Contractual*	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 9,355	<p><i>E. coli</i> analysis costs: 105 samples @ \$41 ea.: \$4,305</p> <p>Computer software for data processing: \$150</p> <p>Monitoring Equipment Usage Fee: 22 sampling days @ \$225/day: \$4,950</p>
Indirect	\$ 14,663	15% Total Direct Costs (TDC)